

Work Order ID 146838

Monday, May 30, 2016 8:10:13 AM

146838

Page 1

Item ID: D5122-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Center Support, Upper

Start Date: 6/10/2016 Start Qty: 12.00

12

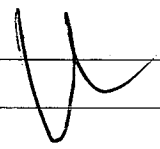
Cust Item ID:

Required Date: 6/17/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan:  Date: _____ Tooling: _____ Date: _____Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D5122

A

100

0.02

100

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

1.56

HAAS CNC vertical machine #1

Machine as per Folio FB324

Folio Rev: AADwg Rev: A

Deburr

12 0

DAS JL
20
9-89 16-07-06

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.02

Quality Control

12 0

DAS JL
20
9-89 16-07-06

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 146838

Monday, May 30, 2016 8:10:13 AM

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Page 2

Item ID: D5122-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Center Support, Upper

Start Date: 6/10/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 6/17/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.04							DAS 08 989
Quality Control									
121	QC5- Inspect part completeness to spec on W49	0.00							
121									
QC	Memo	0.04							
Quality Control									
130	Identify as per dwg & Stock Location: <u>LG054</u>	0.00							
130									
Packaging	Memo	0.02							
Packaging	LOCATION : LG054								

JUL 08 2016

12x Sep 16-7-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
					QC / QA Coordinator Approval				
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Work Order ID 146838

Monday, May 30, 2016 8:10:13 AM

146838

Page 3

Item ID: D5122-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Center Support, Upper

Start Date: 6/10/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 6/17/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.20

Quality Control

DAS
21
9-89**JUL 12 2016****DAS**
21
9-89**JUL 12 2016**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Picklist Print

Monday, May 30, 2016 8:10:13 AM

Page 1

Work Order ID: 146838

146838

Parent Item: D5122-1

D5122-1

Parent Item Name: Center Support, Upper

Start Date: 6/10/2016

Required Date: 6/17/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV.A NEW ISSUE JFS 14/07/16 VERIFIED BY: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D5122-1TRN

Manufactured

No

100

Each

6.0000

0.5

6

D5122-1TRN

Center Support, Upper, Turning Detail

21674

Location

Loc Qty

Loc Code

MAT060

6

143392

6

6

DQA: _____ Date: _____

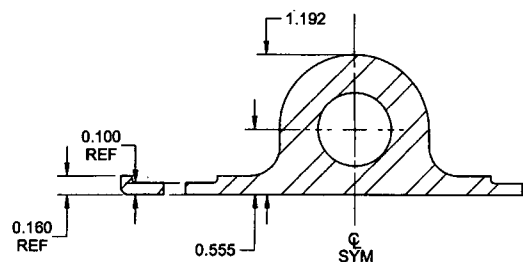


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



SECTION A-A

HOLES PERPENDICULAR
WITHIN 0.005 OVER
ENTIRE LENGTH

R0.063
AROUND INSIDE EDGE

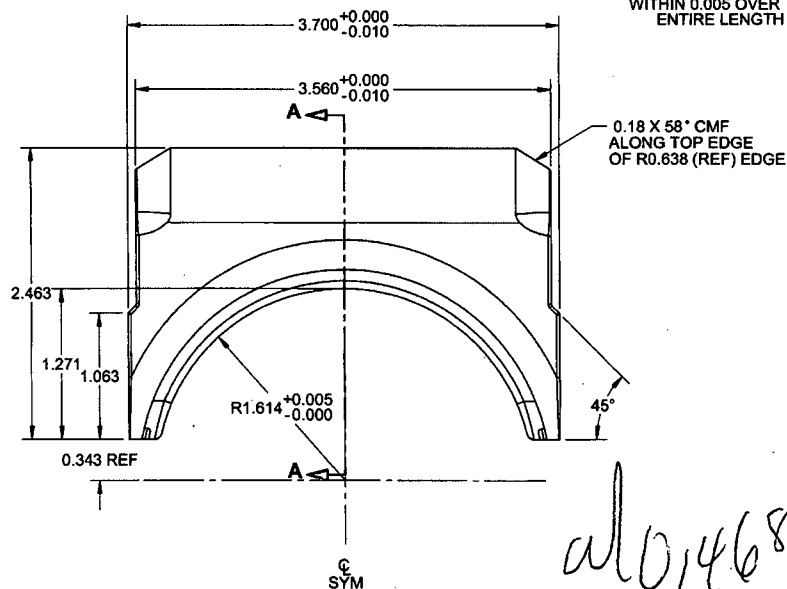
0.464 REF

OPTIONAL Ø0.261 REF
TOOLING HOLE,
LOCATED AT 45° TO VERTICAL
4 PL

OPTIONAL Ø0.189 REF
TOOLING HOLE,
2 PL

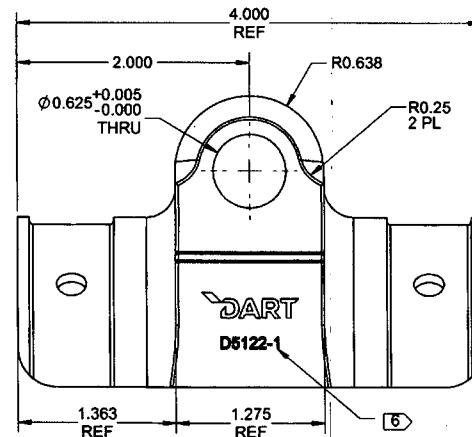
HOLES PERPENDICULAR
WITHIN 0.005 OVER
ENTIRE LENGTH

3.072 REF



D5122-1 CENTER SUPPORT

0.18 X 58° CMF
ALONG TOP EDGE
OF R0.638 (REF) EDGE



RELEASED
2014-08-25

APPROVED

DESIGN	AP
DRAWN	AP
CHECKED	CP
MFG. APPR.	JLM
APPROVED	MP
DE APPR.	DS
DATE	14.06.02

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D5122	REV. A SHEET 2 OF 3
TITLE CENTER SUPPORT	SCALE NTS
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al0146838

DART AEROSPACE LTD		Work Order: 146838
Description: Center Support		Part Number: D5122-1
Inspection Dwg: D5122 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	1.182	1.202		1.190	1.190	1.193	1.190	1.1935
AB	0.090	0.110		.097	.097	.097	.097	.097
AC	0.545	0.565		.551	.5515	.551	.550	.553
AD	3.690	3.700		3.695	3.695	3.697	3.698	3.697
AE	3.550	3.560		3.555	3.555	3.559	3.558	3.556
AF	2.453	2.473		2.462	2.462	2.465	2.467	2.465
AG	1.261	1.281		1.2715	1.270	1.270	1.273	1.272
AH	0.150	0.210		.182	.182	.182	.182	.182
AI	0.454	0.474		.460	.458	.460	.460	.460
AJ	Ø0.260	Ø0.267		.261	.261	.261	.261	.261
AK	Ø0.188	Ø0.194		.190	.190	.190	.190	.190
AL	3.067	3.077		3.073	3.073	3.073	3.073	3.073
AM	3.990	4.010		4.000	4.000	4.000	4.000	4.002
AN	1.990	2.010		1.9985	1.999	1.998	2.003	2.003
AO	Ø0.625	Ø0.630		.627	.627	.626	.626	.624
AP								
AQ								
AR								
AS								
AT								
AU								
AV								
AW								
AX								
AY								
AZ								
Ensure that Ø " bore is perpendicular to " bore within "								
Accept/Reject								

DAS

Measured by: 20 16-07-05	Date:
Audited by: B.A 16/07/07	Date: 16/07/07
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	15.03.12	New Issue	KJ	

DART AEROSPACE LTD		Work Order:	
Description: Center Support		Part Number:	D5122-1
Inspection Dwg: D5122 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				6 mm	7 mm	8 mm	9 mm	10 mm
HAAS Section								
AA	1.782	1.202		1.193	1.191	1.190	1.192	1.190
AB	0.090	0.110		.097	.097	.097	.097	.097
AC	0.545	0.565		.553	.555	.553	.556	.555
AD	3.690	3.700		3.697	3.691	3.691	3.695	3.694
AE	3.550	3.560		3.556	3.551	3.551	3.556	3.555
AF	2.453	2.473		2.4655	2.4625	2.464	2.464	2.465
AG	1.261	1.281		1.273	1.273	1.272	1.270	1.273
AH	0.150	0.210		.182	.182	.182	.182	.182
AI	0.454	0.474		.460	.460	.460	.460	.460
AJ	Ø0.260	Ø0.267		.261	.261	.261	.261	.261
AK	Ø0.188	Ø0.194		.190	.190	.190	.190	.190
AL	3.067	3.077		3.073	3.073	3.073	3.073	3.073
AM	3.990	4.010		4.007	4.000	4.000	4.001	4.001
AN	1.990	2.010		2.004	2.000	2.001	1.9985	1.9985
AO	Ø0.625	Ø0.630		.626	.626	.626	.626	.626
AP								
AQ								
AR								
AS								
AT								
AU								
AV								
AW								
AX								
AY								
AZ								
Ensure that Ø " bore is perpendicular to " bore within "								
Accept/Reject								

Measured by:	DAS 20 9-89 16-07-05	Date:	
Audited by:	D.A 16/07/07 DAS 08 9-89	Date:	16/07/07
Preliminary Approval:		Date:	

Rev	Date	Change	Revised By	Approved
A	15.03.12	New Issue	KJ	

DART AEROSPACE LTD		Work Order:	
Description: Center Support		Part Number:	D5122-1
Inspection Dwg: D5122 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				11 A	12 M	X	X	X
HAAS Section								
AA	1.782	1.202		1.195	1.192			
AB	0.090	0.110		.097	.097			
AC	0.545	0.565		.557	.553			
AD	3.690	3.700		3.695	3.695			
AE	3.550	3.560		3.555	3.555			
AF	2.453	2.473		2.464	2.465			
AG	1.261	1.281		1.270	1.273			
AH	0.150	0.210		.180	.180			
AI	0.454	0.474		.460	.460			
AJ	Ø0.260	Ø0.267		.261	.261			
AK	Ø0.188	Ø0.194		.190	.190			
AL	3.067	3.077		3.072	3.072			
AM	3.990	4.010		4.000	4.000			
AN	1.990	2.010		1.9985	1.9985			
AO	Ø0.625	Ø0.630		.626	.626			
AP								
AQ								
AR								
AS								
AT								
AU								
AV								
AW								
AX								
AY								
AZ								
Ensure that Ø " bore is perpendicular to " bore within "								
Accept/Reject								

Measured by: <u>20 116-07-06</u>		Date:
Audited by: <u>LA 16/07/07</u>		Date: <u>16/07/07</u>
Preliminary Approval:		Date:

Rev	Date	Change	Revised by	Approved
A	15.03.12	New Issue	KJ	